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THE ESSENCE OF PEIRCE'S SYSTEM[1]

I

IT is somewhat of a misfortune—though not without its compensations—for a great philosopher to win no disciples during his lifetime. With no one to expand and apply his main doctrines sympathetically and conscientiously he is likely to lose a grasp of the full meaning of his own views. Unable to see his basic theories in new settings, he is forced to move painfully from position to position with no guide but that provided by a flickering and uncertain vision. The living philosopher needs disciples to give him ballast and balance; the disciples need him to give them insight and direction. It was Peirce's and his contemporaries' tragedy that he had friends and well wishers, but none who both sympathized and understood.[2] It is therefore a remarkable fact that he should have been able to hold so long and so steadily to the same views and could develop them with so much consistency and thoroughness. Yet how much might he (and incidentally we and his contemporaries) have gained had James, who sympathized so much, understood him better? Contrast, for example, "I yield to no one in admiration of his genius . . . he's a genius, and I look forward with avidity to his work,"[3] and "There is no more original thinker than yourself in our generation. You have personally suggested more important things to me than perhaps anyone I have known,"[4] with "I have been to C. S. Peirce's lecture which I could not understand a word of, but rather enjoyed the sensation of listening to for an hour,"[5] and the strange description[6] of Peirce's elementary "Lectures on

[1] Read in part at the special session on Peirce at the joint meeting of the Eastern and Western Divisions of the American Philosophical Association held at Columbia University, December 29, 1939.

[2] But see G. Stanley Hall's article in *Mind*, Vol. IV (1879), p. 102.

[3] *The Thought and Character of William James* by R. B. Perry, Vol. II, p. 117.

[4] *Ibid.*, p. 414.

[5] *Ibid.*, Vol. I, p. 231.

[6] *Pragmatism*, p. 5.

Pragmatism'' as ''flashes of brilliant light relieved against Cimmerian darkness.[7]

It is perhaps a greater misfortune, however, for a dead philosopher to win disciples—a tragedy for us and those who follow after. His followers mould his remains into shapes which conform to the passing fashions of the day, or dissect him into a multiplicity of minor and apparently conflicting views. And when those views pass, we risk the loss of the philosopher altogether. With the decline of the Academy we almost lost Plato; Aristotle was almost swept away with the flood which drowned the scholastics; with the decay of objective idealism, Kant and Hegel became men whom we were asked to go around and not through.[8] It is not necessary to place Peirce in the rank of these to remark that he too was a philosopher and is about to be lost to us in similar ways.

I am not concerned with praising Peirce—that would be impertinent—but in doing honor to him on this the hundredth anniversary of his birth. And I can think of no better way than to call to mind that once before he was on the verge of being kidnapped and dismembered.[9] Perhaps it is not too late to remark that the attempt to reduce him wholely to the status of one of the founders or major figures in the development of a symbolic logic, a science of signs, a positivism, empiricism, nominalism, or pragmatism is mischievous and misconceived. Peirce was a metaphysician as well as a logician, a realist as well as a semiotician, a speculative thinker as well as an experimental scientist, an idealist as well as a naturalist, and a pragmatist who had a theory of ethics which acknowledged a fixed and universal ideal. These were not for him, and ought not be for us, inconsistent positions. Truth is rich and complex enough to accommodate both the abstract and the concrete, the temporal and the eternal, the general and the specific, the absolute and the relative, the probable and the certain. Peirce was a philosopher precisely because he saw that these different factors were facets of one encompassing truth and reality, and that philosophy was not a point of view but a study of that which embraces all points of view.

[7] But cf. also Perry, *op. cit.*, Vol. I, pp. 292, 296, 321, 332, 363, 536; Vol. II, pp. 117, 375, 416, 418, 436, 438, 439, and 645. Perry's comments in these places—and particularly in Vol. I, pp. 533, and Vol. II, pp. 406ff—seem to me to obscure rather than to clarify the nature of Peirce's thought and his relation to James. This is especially true of the account of Peirce's tychism and synechism in Vol. II, pp. 411–412.

[8] See, e.g., William James's *Collected Essays and Reviews*, p. 437, and John Dewey's *Characters and Events*, Vol. I, pp. 63–68.

[9] See *Collected Papers of Charles Sanders Peirce*, edited by Charles Hartshorne and Paul Weiss, 5.414.

II

Metaphysics, for Peirce, is a sub-order of philosophy. Philosophy is a sub-class of the science of discovery, and this in turn is a branch of theoretical science.[10] The function of metaphysics is to explain the variety of the universe. "The universe has an explanation, the function of which . . . is to unify its observed variety."[11] Its data is observable by every man at every moment.

> Metaphysics, even bad metaphysics, really rests on observations, whether consciously or not; and the only reason that this is not universally recognized is that it rests upon kinds of phenomena with which every man's experience is so saturated that he usually pays no attention to them. The data of metaphysics are not less open to observation, but immeasurably more so, than the data, say, of the highly developed science of astronomy. [6.2.] Philosophy contents itself with observations such as come within the range of every man's normal experience and for the most part in every waking hour of his life. . . . These observations escape the untrained eye precisely because they permeate our whole lives, just as a man who never takes off his blue spectacles soon ceases to see the blue tinge.[12]

It is impossible to dispense with metaphysics; all one can do is to replace one metaphysical view by another. "Every man of us has a metaphysics, and has to have one. . . . There is no escape from the need of a critical examination of 'first principles.'"[13] To reject metaphysics is to exhibit a preference for a dogmatic view instead of for a carefully developed, self-conscious, and self-reflective one.

> Find a scientific man who proposes to get along without any metaphysics—not by any means every man who holds the ordinary reasonings of metaphysicians in scorn—and you have found one whose doctrines are thoroughly vitiated by the crude and uncriticized metaphysics with which they are packed. [1.129.]

Every science, in fact, presupposes propositions beyond its power to evaluate.

> The special sciences are obliged to take for granted a number of most important propositions, because their ways of working afford no means of bringing these propositions to the test. In short, they always rest upon metaphysics.[14]

When, then, some moderns define all metaphysical discourse as contraband they are merely asking for the privilege of allowing their

[10] See 1.239ff, 1.282, 6.6.

[11] 1.487. In 1.405, however, Peirce remarks that "There is a class of facts of which it is not reasonable to expect an explanation, namely facts of indeterminacy or variety." These two statements are not really in conflict. The former refers to the meaning of the variety, the latter to its occurrence.

[12] 1.241. See also 6.5.

[13] 1.129.

[14] 1.129.

own metaphysical preconceptions to go unexamined and uncriticized.[15]

III

Metaphysics, for Peirce, differs from the special sciences only in its inescapability, evidence, and generality, and agrees with them in being dependent on mathematics, phenomenology, esthetics, ethics, and logic.

According to him, it is dependent on logic in a two-fold way. It is concerned with problems whose resolution requires maturity, if not subtlety, of thought. "Metaphysics is a most difficult science, presenting more pitfalls for the uninformed than almost any, which a mere amateur at it would be foolish to fancy that he could escape."[16] "Metaphysical philosophy has no work that *hard thinking* can do. What is needed above all, for metaphysics, is thorough and mature thinking."[17] One who is unable to use the powerful and effective instrument of modern logic, particularly the logic of relatives, is bound to be trapped in the paradoxes and prejudices of the past.

Unless the metaphysician is a most thorough master of formal logic—and especially of the inductive side of the logic of relatives . . .—he will inevitably fall into the practice of deciding upon the validity of reasonings . . . by the impression those reasonings make upon the mind. . . . Just look at the dealings of the metaphysicians with Zeno's objection to motion. . . . The metaphysician who is not prepared to grapple with all the difficulties of modern exact logic had better put up his shutters and go out of trade. [1.624.]

A metaphysics not founded on the science of logic is of all branches of scientific inquiry the most shaky and insecure. [2.36.]

Secondly, as both Aristotle and Kant recognized, metaphysical concepts should be adaptations of logical ones.

If the theory of logic which is to be developed in this book has any truth, the position of the two greatest of all metaphysicians, Aristotle and Kant, will herein be supported by satisfactory proof, that that science [metaphysics] can only rest directly upon the theory of logic. Indeed it may be said that there has hardly been a metaphysician of the first rank who had not made logic his stepping stone to metaphysics. [2.121.]

The only rational way would be to settle first the principles of reasoning, and that done, to base one's metaphysics upon those principles. [2.166.]

Metaphysical conceptions . . . are merely adapted from those of formal logic. [1.625.]

[15] See my "Metaphysics: The Domain of Ignorance," *Philosophical Review*, Vol. XLIII (1934), pp. 401–406; *Reality*, pp. 93–95.

[16] 1.204.

[17] 3.406.

Metaphysics consists in the results of the absolute acceptance of logical principles not merely as regulatively valid but as truths of being.[18]

Peirce's metaphysical categories, chance, law, and continuity,[19] seem to be adaptations of the three basic inferential processes of abduction, deduction, and induction.[20] The power, growth, and self-corrective nature of logic, and particularly of induction, seem to be the clue to his view that all the elements of the universe are being gradually solidified into a single rational whole.

Synechism [i.e., continuity] is founded on the notion that the coalescence, the becoming continuous, the becoming governed by laws, the becoming instinct with general ideas, are but phases of one and the same process of the growth of reasonableness. This is first shown to be true with mathematical exactitude in the field of logic, and is thence inferred to hold good metaphysically. [5.4.]

Metaphysics is the science of reality. Reality consists in regularity. Real regularity is active law. Active law is efficient reasonableness, or in other words is truly reasonable reasonableness. Reasonable reasonableness is Thirdness as Thirdness. [5.121.]

(That induction is a form of Thirdness as Thirdness is evident from 2.89–96.)

Peirce, however, was very insistent that it would be wrong to rest logic on metaphysics.[21] "To found logic on metaphysics is a crazy scheme."[22] He would have found even more to object to in Dewey's attempt to found it on biology or the practices of scientists. Logic was abstract, formal, with its own laws and conditions; he could see no rationale in making it dependent on the concrete, the specialized, the contingent, and fallible. Peirce reviewed the *Studies in Logical Theory*[23] and observed that it could not offer an adequate norm of what was valid or not. He would comment on Dewey's later work perhaps to the effect that pragmatism or instrumentalism can not determine, but must presuppose, a logic, and that the attempt to deal with logic in any but its own terms would destroy its value as a support of the exact sciences.[24]

Peirce's insistence on the priority of logic prevented him from affirming that there was a deep and important sense in which logic rested on metaphysics as surely as metaphysics rested on logic. But, he himself was able to affirm that logic was social in its essence[25] only because he had already rejected the Leibnizian uni-

[18] 1.487. See also 3.487, and 5.448n.
[19] See 6.32 and 6.202.
[20] See 1.485, 1.487, 6.32.
[21] But see the qualification in 4.571.
[22] 2.168; see also 2.36f.
[23] *Nation*, Vol. 79 (1904), p. 220.
[24] See 2.36, 5.452.
[25] "The social principle is rooted intrinsically in logic." [5.354.]

verse of monads. "Leibnitz is a pure individualistic nominalist" (6.393). He could view the laws of logic as habits [26] only because he held that laws and universals were real.[27] Logical laws on any view must have some kind of being; realities on any view must have some kind of rationale. For an evolutionary philosopher such as Peirce,[28] logic and metaphysics must be but different ways of expressing the truth that the world has a progressively rational structure capable of being mastered by beings who are becoming more and more reasonable.

We have, as a deduction from the principle that thought is the mirror of being, the law that the end of being and highest reality is the living impersonation of the idea that evolution generates. [1.487.]

What we think of cannot possibly be of a different nature from thought itself. For the thought thinking and the immediate thought-object are the very same thing regarded from different points of view.[29]

IV

Because his logic and his metaphysics were intimately connected, Peirce had no difficulty in resolving what today is termed the "semantic" problem of the relation of signs to their objects. His answer in brief is contained in his observation that an object is itself a kind of thought or sign.

Every sign stands for an object independent of itself; but it can only be a sign of that object insofar as that object is itself of the nature of a sign or thought. For the sign does not affect the object but is affected by it; so that the object must be able to convey thought, that is, must be of the nature of a thought or sign. [1.538.]

Signs duplicate the structure of, interact with, or, in the ideal case, embody the same laws or habits that their objects do. It was his view that the entire cosmos was overrun with signs,[30] and that every thought,[31] law,[32] and man [33] was a sign, i.e. an entity which had meaning only in terms of some other more comprehensive and rational sign which welded the totality of things and beliefs together into a fixed and perfect whole.

[26] 3.15ff, 5.268, 6.144, 6.280ff.

[27] 5.503, 5.423, 1.15ff, 4.1ff.

[28] 1.174, 1.175.

[29] 6.339. See also the quotations above from 5.121 and 5.4.

[30] "The entire universe . . . is perfused with signs, if it is not composed exclusively of signs" (5.448n).

[31] "Thought is in itself essentially of the nature of a sign" (5.594).

[32] "A law is in itself nothing but a general formula or symbol" (5.107).

[33] "Man is the thought" (5.314). "A human being . . . is a sign himself" (6.344).

What anything really is, is what it may finally come to be known in the ideal state of complete information, so that reality depends on the ultimate decision of the community; so thought is what it is only by virtue of its addressing a future thought which is in its value as thought identical with it, though more developed. [5.316.]

The very origin of the conception of reality shows that this conception essentially involves the notion of a COMMUNITY, without definite limits, and capable of a definite increase of knowledge. [5.311.]

Peirce never gave sufficient weight to the fact of individual existence [34] and undoubtedly exaggerated the place that signs occupied in men and things. But what is important today is the fact that his firm realism prevented him not only from having difficulty with semantics, but of committing the modern error of supposing that the laws of logic were arbitrary or conventional, or that "pragmatics" had to do with the "action, state and environment of a man who speaks or hears." [35] The heart of the pragmatic maxim lies in its interpretation of the meaning of concepts as involving a reference, not to the particular or existential, but to the rational or general.

If it be admitted that action wants an end, and that that end must be something of a general description, then the spirit of the maxim itself, which is that we must look to the upshot of our concepts in order rightly to apprehend them, would direct us towards something different from practical facts, namely to general ideas, as the true interpreters of our thought. [5.3.]

The most perfect account of a concept that words can convey will consist in a description of the habit which that concept is calculated to produce. [5.491.]

V

Peirce was a laboratory scientist who had made careful experiments with the pendulum and long and detailed observations in astronomy and on weights and measures.[36] Perhaps that is the reason he refused to exaggerate the evidence, purity, independence, or universality of science. The premisses of science, Peirce saw, were directly observable, the conclusions not.

[34] "Individualism and falsity are one and the same" (5.402n). See also 5.503.

[35] See Carnap's "Foundations of Logic and Mathematics" *International Encyclopedia of Unified Science*, vol. 1, number 3, p. 4.

[36] The volume containing this material is almost ready for publication and has been for some time. It is doubtful, however, in view of the slow, though progressive, sale of the earlier volumes, whether it will be published in the near future. There is a biography, incidentally, of Peirce in the *American Dictionary of Biography;* autobiographical comments are to be found in the published volumes, indexed under "autobiographical references" in the Index of Subjects.

We cannot see energy, nor the attraction of gravitation, nor the flying molecules of gasses nor the luminiferous ether, nor the forests of the carbonaceous era, nor the explosions in the nerve cells. [6.2.]

If then it is observables with which we are really concerned we ought to devote ourselves to phenomenology and metaphysics. He saw too that the development of science was determined in part by the costs of experimentation,[37] the ethics of its practitioners [38] and by their unexamined preconceptions.[39] He was clear and insistent on the fact that the special sciences presuppose work in metaphysics, logic, ethics, esthetics, phenomenology, and mathematics,[40] for these deal with their preconceptions, provide them with their norms, ends, and distinctions, and mark out the realm of the things that are really possible. The scope of science, he saw, was far from universal; it could "no more deny a miracle than it could assert one," [41] nor determine the nature of the distinction between fact and fancy.[42] He was inclined to exaggerate its uselessness ("true science is distinctly the study of useless things" [43]) and to make a fetish of the word [44] but that did not, fortunately, prevent him from seeing that it is the proper pursuit only of those who are imbued with a sincere desire to learn,[45] and that it would be inconsistent with that desire to block the road of inquiry by making arbitrary decisions as to what can and can not be known.[46] No one imbued with a love of knowledge would try to deny truths and inquiries because they were uncongenial,[47] and no one who had reflected could term himself a "fallibilist" without recognizing the metaphysical truth that there were real laws of nature which changed and grew.[48]

[37] "It does not pay (in any given state of science) to push the investigation beyond a certain point in fullness and precision" (1.122).

[38] "There is an ethics indissolubly bound up with it [science]—an ethics of fairness and impartiality" (6.3).

[39] See, e.g., 1.109, 1.204.

[40] See 1.183f, 1.249–50.

[41] 1.90.

[42] 6.6.

[43] 1.76. See also 1.55, 1.618.

[44] See 5.384f where the method of determining beliefs by something real is perversely identified as the method of science and science alone. See also 1.183ff where phenomenology, ethics, esthetics, logic, and metaphysics are described as positive or experimental sciences.

[45] "It is not knowing, but the love of learning, that characterizes the scientific man" (1.44).

[46] See 1.135ff.

[47] See 1.57.

[48] See 1.173f.

VI

It was this interpretation of the nature of laws which made it possible for Peirce to be both a naturalist and an idealist. All naturalists and most idealists, I suppose, deny that there are any completely transcendent realities; both can affirm the existence of regularities in nature. They diverge perhaps primarily on the question as to whether matter or mind, efficient or final causation, provides the clue to the secrets of the universe.[49] Peirce, who held that his philosophy "resuscitated Hegel" (1.42) and that matter was habituated mind (6.25) was obviously an idealist. But since he held that matter existed, that it was subject to efficient causation, and that laws were immanent in things, he was obviously a naturalist as well. He reconciled the two by showing their interdependence, while leaning towards the idealistic account.

> Final causation without efficient causation is helpless. . . . Efficient causation without final causation, however, is worse than helpless, by far; it is mere chaos. [1.220.]

> Physical evolution works towards ends in the same way that mental action works towards ends, and thus in one aspect of the matter it would be perfectly true to say that final causation alone is primary. Yet, on the other hand, the law of habit is a simple formal law, a law of efficient causation; so that either way of regarding the matter is equally true, although the former is more intelligent.[50]

Naturalism might, however, be defined as the view which attempts to explain everything by the operation of force, combination, or aggregation. If this be its meaning, then Peirce not only supplements it with an objective idealism which insists on the presence of an element of law, mind, or rationality in the universe, but with a subjective idealism or empiricism which stresses the element of immediacy. Peirce insisted on all three, and thereby resuscitated Hegel, but "in a strange costume" (1.42).

> Had Hegel, instead of regarding the first two stages with his smile of contempt, held on to them as independent or distinct elements of the triune Reality, pragmaticists might have looked up to him as the great vindicator of their truth.[51]

It is strange that Peirce did not see that in making this change he also resuscitated and transformed both the traditional naturalism and the traditional empiricism and subjectivism. All three views require and supplement one another.

[49] Cf. 6.24, 1.220.
[50] 6.101. See also 1.437.
[51] 5.436; see also 5.91.

We have now reached what I think is the essence of Peirce's system. From the beginning to the end of his career he devoted his energies to developing and applying the doctrine that there were three basic and irreducible categories—being, opposition, and reason, or immediacy, action, and mediation, or, as he preferred to say, Firstness, Secondness, and Thirdness. Suggested originally by Kant [52] they were justified by logic and observation, and eventually became the clue for him to the classification of the sciences, the fundamental divisions of semiotics, metaphysics, and logic, and suggested to him the nature of the object of esthetic inquiry.

Each of these categories should be viewed as prior to and explanatory of the others.[53] The immediate is the aboriginal, the first in the order of evolution,[54] "the most primitive, simple and original of the categories" (2.90). The existential or active is first in the order of fact, the locus of both the immediate and the rational. "Existence is dyadic" (1.329) and as present must be a first (2.85, 1.341) and as intelligible must embody a third (5.431). The third is first in meaning, relating and completing the others.[55] Each category is something in itself, each is distinct from and contrasted with the others, and each is intrinsically intelligible.[56] Peirce, however, was unfortunately too dominated by the Kantian and Hegelian values to give sufficient weight to the first two categories. Otherwise he might have been more ready to describe them all as views or perspectives on the whole of things, each embracing and being embraced by the others. Instead he stressed the third category and never explicitly took it to be subsidiary to the other two.

VII

Peirce's stress on Thirdness with his coördinate acknowledgment of the other two categories, is evident in his account of pragmatism. Pragmatism, for him, is a method of evaluating hypotheses [57] or "firsts" in terms of an ultimate end, or "second." [58] Peirce shifted his emphases from time to time, and as the years went on found more and more features which differentiated his views from others,[59] but, throughout, his doctrine seems to be marked off

[52] See 1.563.

[53] See 2.89ff.

[54] See 1.490, 1.474.

[55] "Thirdness is that which is what it is by virtue of imparting a quality to reactions in the future" (1.343). See also 5.91.

[56] 2.89f. But see also 1.353, 1.530.

[57] 5.196.

[58] 4.539.

[59] 5.423.

by its recognition of the basic rôle which rationality, order, continuity, and habit play in the interpretation of a concept. "I was speaking [in my original pragmatism paper] of meaning in no other sense than that of *intellectual purport*, . . . or adequate proper interpretation of any symbol."[60] Here he seems to be one with Dewey. But he differs from Dewey in remarking that pragmatism, instead of refusing to acknowledge the reality of a fixed and ultimate end of action, is inevitably forced to acknowledge one. "In order to understand pragmatism," he remarks, "it is incumbent upon us to inquire what an ultimate aim, capable of being pursued in an indefinitely prolonged course of action, can be."[61] He thinks it is the "free development of the agent's own esthetic quality" in a state of freedom from disturbance by the external world.[62] The proof of this he thought only metaphysics could provide. If he is right, then pragmatism, instead of eliminating metaphysics, depends for its very meaning on the successful pursuit of metaphysical inquiry. Certainly something like this view is necessary if pragmatism is to be an effective and rational method for directing inquiry, for without some definite and ultimate end in view we can do nothing more than experiment and experiment without knowing why we should.

But more important is the fact that once the first and second categories are recognized to have a status equal to that of the third, there ought to be a kind of pragmatism whose function is to unite action and reason by means of an intuition into ideals, and another kind whose function is to relate feeling and reason dynamically by way of action. The former would be a pragmatism in the realm of ends, the latter a pragmatism in the field of conduct. They would be methods by which we clarified, not our concepts, but our efforts and our emotions, and these, not by intellectual devices, but by insight, on the one hand, and ethical behavior on the other. Peirce rightly insisted that the only proper way to "clarify" ideas was by means of other ideas. But what, apart from a rationalistic prejudice, prevented him from seeing that there was an analogous way in which intuition clarified the meaning of action and ethical conduct clarified the nature of feeling? Most of Peirce's limitations, as I see it, follow from the fact that he never adequately saw that the first and second categories were as basic and as revelatory as the third. If this be true, then the importance of Peirce for the future will lie in his capacity to provide the basic material and

[60] 5.402n. See also 5.3, 5.429.

[61] 5.135.

[62] 5.136.

distinctions by which his own insights can be completed and transcended.

VIII

There are many important matters on which I have not touched, such as Peirce's "critical common-sensism," his logic of abduction, his distinction between logic and mathematics, and his views on psychology, theology, perception, and history. Many passages too can undoubtedly be produced which seem to, and perhaps actually run counter to, those here quoted or expressed. Neither of these is, I think, a serious matter. The relation between what has here been included and what neglected can, I think, be easily discerned from the published papers;[63] the contradictions and wobblings in position reveal, I think, little more than that philosophers, like other men, are human and fallible. Nor would it be serious if the present thesis that Peirce was a systematic, comprehensive thinker, should find no favor. Systems perhaps are important primarily because they provide an opportunity for systematic criticism, appreciation, or improvement. What would be serious would be the reduction of Peirce to the level of a "seminal mind," the full flower of which we are today enjoying, for that would mean that Peirce had no place among the perennial philosophers, and must be defined as one who already is, and in a deep and regrettable sense, was always out of date.

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COMMENTS AND CRITICISM

THE ACCIDENTS OF PEIRCE'S SYSTEM

PROFESSOR WEISS contends in the preceding article that Peirce's philosophical contributions acquire their essential significance when regarded as elements of a system. He believes that if the system is "dissected" or "dismembered" its constituent theories are in danger of assimilation and inevitable distortion by philosophic factions. This, of course, presupposes what has so often been contested, that all the theories are compatible. Pro-

[63] The passages referred to in this essay often contain, not only references to other places where the points here made are reaffirmed or elucidated, but explicit comments on questions which have not been here discussed. Nothing less than a full use of these references would provide an adequate grasp of the heart of Peirce's views. In this sense, the present paper can pretend to give only an outline of the essence of the system, and but the barest hint of its richness and variety.

fessor Weiss admits that quotations contradicting his own can be advanced, but belittles their importance. Probably he would not claim that he had established the validity of the systematic interpretation, but that he had begun what could be completed.

Why Professor Weiss should dread abstraction from Peirce is not clear. Whatever cumulative growth there has been in the stream of classical philosophy has been achieved not by modifying a ready-made system, but by the partial or limited acceptance of a given philosopher's work through discriminating selection, and this where the homogeneity of the previous system was far greater than in Peirce. Kant, for instance, could extend the philosophic horizon by abstracting from philosophers of widely opposite tendency, and we do not have to be told today of the possibility, in fact the advisability, of profiting from Kant while freeing ourselves from the outlines of his system. Only as thus assimilated can theories contribute to that progressive growth of coöperative philosophizing which Peirce so ardently desired. As for the evil of distorted interpretation, it is as likely to befall an entire system as a single theory. Professor Weiss's interest in preserving the distinctive character of Peirce's philosophy, its esthetic quality as a unique historical whole, perhaps reflects a preference of his own for individualism in philosophic method.

Peirce himself did intend a grand system. I am not here concerned with any exhibition of inconsistencies, though I can not refrain from remarking that he who establishes the internal congruity of a philosophy of common sense with an anthropomorphic panpsychism will prove himself very dexterous indeed. There is a much more serious consideration. It could be shown, by a sufficiently detailed analysis, how vicious are the consequences of interpreting Peirce's individual theories primarily in terms of their place in his total scheme; how, for example, we should misunderstand the conception of fallibilism if we took seriously an assertion that it is closely tied up with metaphysical evolutionism. The reason is that the better of the theories were developed as answers to specific problems, and the results of such inquiries do not respect esthetic demands. Certainly any collection of opinions can be harmonized if we are willing to pay the price of obscurity. In Peirce the price is great, and it is doubtful that we can make the alternative claim of poetic value for the system. But it is with hesitation that one warns of obscurity, because philosophers apparently disagree more than ever on what is and is not obscure. Thus Professor Weiss considers James's appraisal of the Lectures on Pragmatism ("flashes of brilliant light relieved against Cimmerian darkness") a "strange description" of an "elementary"

work, while to me it has always seemed that no description could be more accurate.

In controverting the alleged "intimate connection" between the phenomenology, logic, and metaphysics of Peirce, I must appeal to the very unsubtle distinction between what Peirce says and what Peirce does. We can find him to say almost anything somewhere or other. He might, for example, tell us that pragmatism "cannot be understood" unless such-and-such a principle is presupposed. If, however, after examination it proved to be the case that in the great series of papers on pragmatism or on the logic of empirical science it *was* stated and *was* understandable without employing that principle, this would illustrate what I mean by distinguishing between his saying one thing and doing another; and his saying what he says could reasonably be explained as an *obiter dictum* designed to help unify his projected system. What do we find when we use this procedural criterion?

(1) Peirce *speaks* of pragmatism in one breath with metaphysics and ethics, but any reader can confirm the fact that the *actual formulation* of pragmatism, as the principle of interpretation that he intended it to be, is rooted in logic or general semiotic alone. Procedurally examined, it becomes clear that the various papers on pragmatism are elaborate attempts to define a certain sub-class of "logical interpretants" of a sign.[1] (Cf., e.g., 5.464–496.) More than once Peirce says that pragmatism assumes the truth of synechism, the principle of continuity. Now, is not synechism one of the foundations of Peirce's metaphysics? No doubt —but this does not mean that it must itself be a metaphysical assertion. And, in fact, when Peirce makes statements like those relating it to pragmatism, he is thinking of it as a methodological principle, which is precisely what he defines it as in Baldwin's *Dictionary:* "Synechism is not an ultimate and absolute metaphysical doctrine; it is a regulative principle of logic, prescribing what sort of hypothesis is fit to be entertained and examined" (6.173). My purpose is not to match quotations with Professor Weiss, but I must call attention to the numerous occasions on which Peirce protests that his pragmatism is "no doctrine of metaphysics" but a "logical rule" (cf. 5.18, 423, 464–5, 469; 4.534; 6.482, 490, etc.).

(2) Peirce does say, as Professor Weiss points out, that the sciences must turn to metaphysics for certain of their assumptions, but he never says that they must turn to any but the scientific *method;* on the contrary, he is unwaveringly insistent that "Philosophy ought to imitate the successful sciences in its methods"

[1] See my *Charles Peirce's Empiricism,* §§ 29–34, 40.

(5.265). Pragmatism was intended to be the logical instrument enabling it to do this. After its divorce of the genuinely problematic from the pseudo-problematic, "what will remain of philosophy will be a series of problems capable of investigation by the observational methods of the true sciences" (5.423). Moreover, pragmatism is based on a study of science, and is not a methodological legislator to science. The pragmatic method "is no other than that experimental method by which all the successful sciences (in which number nobody in his senses would include metaphysics) have reached the degrees of certainty that are severally proper to them today" (5.465). To say, as Professor Weiss does, that for Peirce the various branches of philosophy "provide" the special sciences "with their norms, ends and distinctions," is quite evidently a misconstruction.

(3) Peirce sometimes does make semiotic distinctions in phenomenological terms, but he does not *have to* do so, and he can and *does* make the same distinctions in logical terms alone. The distinction between different kinds of signs is not arrived at as the result of phenomenological analysis; the case is rather that, once the distinction is made, phenomenological analysis will *discover* in it a manifestation of the three categories, just as it can find them manifested in anything whatsoever that is given to it. Sign distinctions, classifications, and analyses are made by observing "such signs as we know" (2.227), abstracting certain characteristics, and concluding what must hold good of all signs. This logical process Peirce calls "abstractive observation" or "ideal induction" (or "ideal experimentation"). It is, according to him, the instrument of mathematical reasoning; and certainly mathematics, whether in his scheme, in his procedure, or in universal estimation, is independent of phenomenology. The plain fact of the matter is that a far better case can be made out for the view that in Peirce the basic principle of phenomenology, the distinction of the three categories, is suggested by a distinction within purely formal logic—that of the monadic, dyadic, and triadic forms of predicates (rhemata) in the logic of relatives (cf. 3.63, 3.422, 5.469). A First may be unambiguously defined as that character which would be expressed by some statement about a quality, a Second as that character expressible by a statement of a dyadic relation, a Third as that character expressible by a statement of a triadic relation; or, to use Peirce's language, the categories are the three classes of characters defined respectively by "absolute," "simple relative," and "conjugative" predicates. It is significant that when Peirce gives his demonstrations that there can be no more than three classes of indecomposable categories or predicates, these proofs are not

based on phenomenological or metaphysical grounds but have, as he emphasizes, a purely logical or mathematical character (e.g., 1.346–7, 1.561–2, 3.63, 3.421–2).

In view of the foregoing it is difficult to understand what Professor Weiss means when he calls the doctrine of categories "the essence of Peirce's system." What are these categories, anyway? Peirce vacillates between an ontological and a methodological conception of them. When he describes them as quality, fact, and thought, or as spontaneity, opposition, and reason, or in terms of any other such triad of concepts, he appears to warrant the former interpretation. But that he did not intend such an interpretation is clear both from his explicit declaration that phaneroscopy (phenomenology) "has nothing at all to do with the question of how far the phanerons it studies correspond to any realities" (1.287) and from the fact that he coined for the categories the neutral names of Firstness, Secondness, and Thirdness. The purpose of coining these names was to establish the most general possible means of discriminating all other concepts. Firstness, Secondness, and Thirdness are concepts which enable us to classify, organize, and describe any kind of experience (whether it consist in the smell of rotten cabbage or the experience of mathematical reasoning), and they are applicable to all other concepts for this reason. Peirce *has* ontological "categories": mind, matter, and evolution; chance, law, and habit-taking. But these are simply one manifestation of the categories, neither more nor less significant than others, like the logical concepts of abduction, deduction, and induction, or icon, index, and symbol. In the special sciences, the psychological concept of feeling, for example, is a First, the biological concept of heredity is a Second; and so on (cf. 6.32).

A moment's reflection will show that neither the metaphysical nor the methodological interpretation sheds light on the assertion that the doctrine of categories is "the essence of Peirce's system." Is it the essence of the system because it suggests to him (granting this questionable point) how the sciences should be classified? We might as well argue that the concept of abduction is the essence of the system because the principles of all the sciences are hypotheses and all hypotheses are results of abduction. Does it help to define the meaning of concepts in other subject-matters? But while induction, for instance, is said to exemplify Thirdness, it would be as fantastic to suppose that Peirce formulates his principle of induction with the help of the principle of categories as to suppose that he formulates principles of the special sciences in this way simply because he categorizes their concepts.

If Professor Weiss's purpose in locating the "essence" of

Peirce's system is to discover the "first principles" on which this system rests, he is grossly misled by Peirce's classificatory scheme, in which phenomenology is "order 1" of philosophy. Peirce's actual philosophic practice accords not with this scheme but with his fallibilism and experimentalism. One of the eloquent lessons of fallibilism is that no intellectual discipline whatever can have an absolute foundation. Neither the principle of the categories nor any other is the fountain or starting-point of his philosophy. His aim was much less to establish a fixed structure for his "system" than to discover as many independent sources of confirmation as he could for all the theories that constituted it. Order he recognized as an essential of intellectual economy, "as of every other" (5.392), but disproportionate attention to order is precisely his criticism of the classical philosophers; and accordingly he placed himself in the ranks of "laboratory" as opposed to "seminary" philosophy. He would hardly subscribe to the vague account of philosophy attributed to him by Professor Weiss, "a study of that which embraces all points of view." However prosaic some among us may judge him to be, the fact is that he conceived of philosophy as a science which like any science must learn to employ stern canons for the discrimination of evidence, and the ultimate goal of which is universal agreement and a uniform terminology rather than poetic expression of individual perspective. Striking testimony of faithfulness to the scientific ideal is his habit of pointing out and painstakingly correcting specific errors that he had committed in earlier papers.

Professor Weiss believes that Peirce "is about to be lost to us." It may be that by neglecting the systematic element in Peirce we are in danger of overlooking some interesting possibilities. But a much greater danger lurks, that of petrifying his philosophic researches, as we seem to have petrified Royce's. To strain principally for the conservation of his picturesque architectonic will scarcely be to provide the corrective which he lacked while alive. It would be better to honor him in the act, learning from the rich conceptions and potentialities of his thought by intelligent dissection rather than by the esthetic contemplation of their dubious unity.

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CONCERNING THE EMPHASIS ON METHODS

Methodism vs. *scholasticism* in science and education is an issue to which Professor John Dewey, the late Professor George Herbert Mead, and their disciples have dedicated a great deal of philo-

sophical discourse. Having learned from the history of science the danger of putting too much confidence in hypotheses which may for a time seem solidly established, they say that the modern world should transfer the dependence which was once attached to a body of accepted truths to the *method* by which new truths are discovered, i.e., the *scientific method.* This is the new *absolute,* the *absolute of method.*[1]

I wish to examine that thesis in the light of the relationship between *method* and *context.* The argument revolves around the following points: (1) *Method* is always relative to a *context;* (2) *Context* consists of something learned and belonging to the category of "results"; (3) faith in a *method* is in proportion to faith in a *context;* (4) there are two kinds of contexts to consider, (*a*) specific, and (*b*) general or universal; (5) the clarification of *context* clarifies, renders intelligent, the *method* used; and, (6) by way of conclusion, the *method* of science is no more secure than the results of inquiry which provide the context.

The manner in which any intelligent being deals with a problem depends upon the context in which he puts it. Even certain types of insane people use the method which would be appropriate provided the situation were as imagined. A context does not consist entirely of things related in a spatial pattern. The time pattern, which is also important, is telescoped in the memory under the influence of ideas. An insane individual's illusion can be either sensory or ideational, the latter being usually an overgeneralization of a past experience. The ideational and the sensory are obviously inter-linked by the principle of apperception. The dementia praecox patient, suffering from a persecution complex, adapts his methods, often with rare precision, to that particular context of ideas. It will be pointed out immediately that the context is obviously wrong and that if the insane person were capable of applying a sound method he would soon find this out. That is true; but the method is not invalidated until the context is invalidated. It usually requires a larger context, presented through teaching, and commanding belief, to persuade such an individual to abandon his perverted perspective and afterwards the method based upon it. A person suffering from such an illusion may have an essentially sound world view. In such a case he is fortunate, because the method appropriate to the larger context can be appealed to as a basis of correction for the spurious technique as applied in a specific context. On the other hand, a

[1] John Dewey, *Logic: The Theory of Inquiry,* page 5 and following. Charles W. Morris, "General Education and the Unity of Science Movement," *Progressive Education,* Booklet No. 14.

perversion, on the higher level, might reënforce or combine in some manner with that in connection with the more limited context. Conversely, it is possible for one to be effectively sane in the small and insane or nearly so in the large context, since foibles partake of all degrees of abstractness.

The intuitional method of Plato and Aristotle was entirely appropriate to the doctrine of ideas upon which it was based. There was no escape from that method until the context was abandoned; but its abandonment could never have been justified by the use of the method itself. In fact, the use of the method served merely to clarify the context, and *vice versa*. The inductive method of Bacon and J. S. Mill is appropriate in a world in which every event is fully accounted for in terms of physical causes conceived in a certain way. As a method, it is essentially a matter of analyzing the complexes of confused cause and effect relationships. The more certain one is that this picture of the world is correct, the clearer one's conception of the corresponding method becomes and the greater the likelihood that one will write or otherwise conduct a discourse on *methodology*. Logic books are not written by skeptics. Each logician is at least certain enough of the context of ideas which justifies his rules for right thinking to feel the worthwhileness of the undertaking.

Great revolutions in thought occur at times when men are able to shift from one context to another. Galileo's discovery of the *laws of motion* was such a revolution; but Galileo did not begin by applying the so-called experimental method *out of context*. We are told [2] that he already had a pretty definite idea of what would happen before he did any actual experimenting. In a similar, intuitive manner he discovered the law of inertia. The new context for dealing with problems pertaining to motion was provided by his active imagination. But once adopted and put to general use, this method led ultimately to eighteenth-century materialism by which all phenomena were accounted for in terms of falling bodies. That which began as a more or less specific or limited context for a few particular problems, and which would easily have fitted into an animistic world view, was expanded until it was acclaimed by some a context for all problems.

The departure from the authoritarian method, in the above instance, is not so great as it might seem, since the confidence formerly put in Aristotle originally had a rational, experimental basis. We still depend upon authorities whom we place in a rational context. As a rule, the greater the difficulty of finding out

[2] Eugenio Rignano, *The Psychology of Reasoning*, Ch. VI.

for ourselves by some other method the greater the tendency to depend upon the authorities. This is not necessarily a weakness. Our authorities are those who use our method better or under more favorable conditions than we ourselves are able to use it.

However, few if any individuals in the modern world have acquired the prestige once enjoyed by Aristotle; and the greater the prestige the more the context consists of the ideas taken on authority. Professor Dewey is beginning to supply the context on this basis for certain classes of problems and for some people who feel that they can not for lack of time or ability possibly go as far with certain philosophical problems as Professor Dewey has gone. In a measure, this accounts for the tendency manifest in certain circles to view the philosophy of education as a more or less finished job, since everyone either repeats Mr. Dewey's ideas or renounces him along with all philosophy in the interest of an imitative empiricism. In fact, those who affect philosophy without sufficient prestige to justify an audience are not highly respected, because the only basis upon which one can be judged by such busy people is authority which requires prestige. I mention this to show that the appeal to authority is neither contrary to reason nor foreign to the modern, so-called scientific method. When one does not know how or does not have time, it is wise to rely on well-chosen authorities; and we do it, much in the same spirit of, but fortunately with less intensity than, those who once relied upon Aristotle.

Any discussion of *method* depends upon whether one has in mind the specific or the general *context,* in the sense of world view. For instance, when Professor Dewey discusses "The Nature of Method" and "the Nature of Subject Matter,"[3] he virtually identifies the two. Method is treated as not only relative to the subject-matter but to the specific problem at hand as well. Obviously, he has in mind the specific context. But, on the other hand, when he deals with method *überhaupt,* he reduces this to little more than a perspective from which to conceive our problems. He has in mind a context which reflects a sane, *experimentalist's* world view. The social context of *method* is quite obvious in Dewey's discussion of scientific methodology. And, although this *method* may transcend in the order of importance a great many ideas which are either validated or invalidated by it, it does not transcend the one idea which provides its *context* and its justification, namely, the idea of the *social* which Dewey has taken a great deal of pains to clarify and to emphasize as of categorical

[3] *Democracy and Education,* Chs. XIII and XIV.

character.[4] Therefore, some ideas may be subordinated to *method*, from Dewey's point of view, but not this fundamental, contextual idea of *the social*. The latter is a sort of a resultant of a great many *things learned* from science and other sources and accepted as true. The certainty which Dewey expresses [5] that the methodology of science has not and can not change simply reflects a corresponding certainty that the philosophical context which supports it can not be shaken. Perhaps he is right in this faith in his world view, but this does not differ in kind from the faith of the rejected dogmatisms of the past. The excessive emphasis upon method, conceived to be an escape from the dangers of dogmatism, is simply the reverse side of an equally excessive dogmatism about a set of "results" achieved.

The antithesis is not, then, between the *method* and the *content* or *results* of science. It is, rather, between one context and another, both of which partake of the nature of "beliefs" in the ultimate validity of certain accepted ideas. This does not mean, of course, that one context is as adequate as another. In a very significant sense, the context has a deeper relief background in the customs, habits, and ideas of the age. This fact increases the difficulty of seeing the relativity existing between the *context* and the *method* because, given a well-patterned cultural context, the *method* seems to stand on its own rights even after the obvious context of ideas is challenged or thought away. It is self-evident that the rational context clarifying or formulating the method should and must conform more or less to the cultural context. It is also evident that the results reached in the specific context and the methods used in attaining them must square with the larger context as a rational formulation of the accumulated achievements of mankind.

The point is not that we can or can not be certain about "results"; rather, it is that we can be no more certain of method than some kind of "results" which provides the context. If the method employed is of universal application, the context is also universal or philosophical—if the context is tentative, the method is also tentative. The only certain escape from philosophical crystallization would seem to be to accept both method and context as tentative; but it is likely that even this involves a commitment or a resignation to a given, though vague, context of ideas.

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[4] "The Social as a Category," *Monist*, Vol. XXXVIII (1938), pp. 101–127.

[5] *Logic: The Theory of Inquiry*, p. 5.

BOOK REVIEW

Charles Peirce's Empiricism. JUSTUS BUCHLER. (International Library of Psychology, Philosophy and Scientific Method.) New York: Harcourt, Brace and Company. London: Kegan Paul, Trench, Trubner & Co., Ltd. 1939. xvii + 275 pp. $3.50.

The many-sided genius of Charles Peirce is exerting considerable influence on contemporary American philosophy. Ever since the publication of the *Collected Papers,* numerous articles and brochures have borne witness to the impact of his ideas on current thinking. The present volume, however, is the first extensive study of any of these ideas. Dr. Buchler has disentangled the threads of Peirce's empiricism, and has woven them into the kind of pattern their author never succeeded in producing. The book is not designed to be a survey of the whole Peircean "system," but only of an important dimension of it. For Dr. Buchler believes that in spite of his speculative predilections, Peirce was at heart an empiricist; and although the exposition does not aim at "fixing" this belief in the mind of the reader, it does indicate that Peirce's empirical doctrines, abstracted from the rest of his philosophy, form a distinctive and fairly coherent set of ideas.

The book is divided into three sections dealing respectively with Peirce's "critical common-sensism," his pragmatism, and his views on logic and mathematics. In the first section, Dr. Buchler presents the basic contentions of Peirce's common-sensism as they were developed in opposition to the Cartesian tradition and to certain phases of the Scottish philosophy. The central point here is the rejection of immediate knowledge. In his 1868 articles, Peirce insisted that it is unnecessary to assume that we have any intuitive cognitions. Later on, he argued that such cognitions are factually impossible, because knowledge always involves the mediation of signs. Since there are no purely ostensive signs, all symbolic reference is to some extent vague, and therefore all propositions, even those about mental states, must be corrigible. This is the essence of Peirce's "fallibilism." Dr. Buchler explains how fallibilism squares with Peirce's other assertion that the ultimate premises of knowledge are certain "indubitable propositions." By an indubitable proposition (e.g., a perceptual judgment) Peirce means one that is not *in fact* doubted. For genuine doubt can not be induced artificially, as Descartes supposed. It can only arise when objective factors block our habits of action. Hence, although inquiry begins with the occurrence of a problematic situation, it proceeds by accepting a number of common-sense beliefs. These

Dr. Buchler calls the "social and perceptual indubitables." They are not in any sense absolute first principles. On the contrary, they are intrinsically corrigible, and may be modified by subsequent investigation. Thus for Peirce the substructure of knowledge consists of a group of common-sense beliefs formed by the activities of the individual and society. The merging of this contention with fallibilism yields critical common-sensism.

The foregoing doctrine both implies and is implied by the pragmatic maxim. As Dr. Buchler points out, that maxim was consistently recognized by Peirce to be a prescription for clarifying ideas, not a theory of truth. More precisely, it was offered as the one reliable method of determining the meaning of signs, especially of empirical terms and synthetic propositions. Now every sign has an "interpretant" which is itself a sign, and so on indefinitely. Pragmatism lays it down that non-logical signs are significant only if their interpretants specify series of operations leading to sensible results. These operations, being public and repeatable, provide an objective criterion of meaning—a criterion that is really implicit in ordinary linguistic usage, and is not an arbitrary invention. Because it stresses experimental verification, the pragmatic maxim is a paradigm of scientific method. Hence it will be adopted by the individual or the community that has espoused that method of establishing belief. Dr. Buchler shows how Peirce's pragmatism operates within the framework of scientific realism. Properly selected hypotheses can refer to unperceived but existent factors; laws and universals are objectively real. However, in spite of his hostility to positivism, there are elements of conventionalism in Peirce's philosophy of science. Towards the end of this section Dr. Buchler deals with a group of statements in which Peirce seems to modify his original formulation of pragmatism by talking about the "ultimate interpretants" of signs being "habits." Such utterances are difficult to reconcile with his more settled conviction, and Dr. Buchler thinks them of secondary importance. He suggests that they reflect Peirce's concern to *justify* rather than state the pragmatic maxim by linking it closely to human conduct.

The Achilles' heel of traditional empiricism has always been its interpretation of logic and mathematics. Peirce's empiricism is hardly an exception to this rule. Dr. Buchler distinguishes the two senses in which Peirce uses the word "logic," and the three accounts he gives of the nature of logical validity. (*a*) In opposition to the *Rechtsgefühl* doctrine, Peirce declares that the validity of deduction consists in the empirical fact that its premises, when

true, always lead to true conclusions. (*b*) Elsewhere he treats inference in terms of the "leading principles" which govern it. The validity of an argument depends on the "truth" of its leading principle, i.e., on whether the "pretension" of the leading principle to lead to true conclusions from true premises is true. Occasionally it is implied that leading principles are not materially true, but are entirely formal or "empty." This makes their function more intelligible, and is consonant with Peirce's view that necessary reasoning is analytic in character. (*c*) When he comes to treat mathematical reasoning, Peirce argues that it has a validity-criterion of its own arising from the "self-evidence" of the operations performed. For mathematics is wholly independent of logic. The latter is the *theory* of deduction, while the former is its *practice*. Hence mathematics requires merely its own "obviousness" to guarantee its validity. Dr. Buchler rightly concludes that these speculations on the foundations of logic and mathematics, suggestive as they are in certain respects, do not form a systematic body of opinion. The book closes with a brief consideration of Peirce's theory of probability and its relation to induction.

It seems to me that Dr. Buchler has given an accurate exegesis of Peirce's empiricism, and I find myself in agreement with most of the things he says. On one or two minor points, however, comments may be made. I am not at all sure that perceptual judgments escape being the vehicles of intuitive knowledge in Peirce. Nor can I avoid the suspicion that such knowledge is really presupposed in his phenomenology, particularly in connection with the category of secondness. I wish that Dr. Buchler had undertaken to discuss Peirce's phenomenology in more detail. It is surely relevant to the subject of his book, but its precise relation thereto remains obscure. Greater emphasis might also have been placed on the "self-corrective" character of scientific inquiry, and its basis in the procedure of random sampling. This is the character which leads Peirce to regard the general method of science as more reliable than any specific conclusions reached by it.

Dr. Buchler proves himself to be thoroughly familiar with the Peirce material. His book is not likely to make easy reading for those whose interest in Peirce is superficial. But serious students will find it stimulating and useful. It sets a high standard for future commentators on "the profoundest analyst in American philosophy."

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BOOK NOTES

Mathematico-Deductive Theory of Rote Learning. A Study in Scientific Methodology. Clark L. Hull, Carl I. Hovland, Robert T. Ross, Marshall Hall, Donald T. Perkins, Frederic B. Fitch. New Haven: Yale University Press. Published for the Institute of Human Relations. 1940. xii + 329 pp. $3.50.

This volume offers a hypothetico-deductive theory for one field of human behavior. In the introduction the authors briefly discuss aspects of scientific method relevant to the undertaking, and describe some of the techniques and problems of the experiments upon rote-learning. They then develop their theory *more geometrico,* making full use of modern techniques for the construction of deductive systems: sixteen undefined and eighty-six defined terms are introduced, eighteen postulates or primitive propositions are stated, and finally fifty-six theorems with a considerable number of corollaries are demonstrated. The base of the system is formulated not only in ordinary English but also in a notation borrowed from symbolic logic, a feature upon which the authors lay great stress; however, the demonstrations follow the usual mathematical pattern and are not formalized except for a specimen case. In connection with each theorem indications are given as to the extent that the available experimental material corroborates the theoretical results.

It is not easy to see why the authors regard the formulation of the base of their system in the language of symbolic logic such an important feature of their work. They recommend this because of the clarity and rigor it contributes, and look forward to the time when the entire system will be developed in a logistic manner. But while clarity and logical rigor, like steel frames for modern structures, are undoubtedly excellent things, they are obviously not sufficient conditions for making a scientific theory an "important" one. Indeed, to the extent that the theory is a quantitative one the usual language of mathematical analysis is more than adequate for developing its consequences; and it is in fact not obvious that the notation of *Principia Mathematica* is the most convenient and perspicuous one for the authors' purpose. The significance and value of the present undertaking seem to me to lie in the fact that the base of the system is so constructed that, independently of the logistic version, theorems can be unambiguously derived from it; in consequence, theorems can be discovered prior to conducting experiments, so that the theory can be used to direct experimental research while at the same time a genuine test of the theory becomes possible. But in any event the authors have found considerable

empirical material tending to confirm the theory, although they admit that for some of their theorems the experimental evidence is non-existent, ambiguous, conflicting, or inadequate; and, accordingly, modifications of the theory are contemplated to bring it into closer agreement with experimental findings. The theory thus seems to be functioning like a "good" scientific theory should, and it already appears that some of its postulates overlap with the principles of conditioned responses—thus opening up new vistas for exploration.

Some of the more general methodological remarks in this book suggest that the authors are still committed to a somewhat "empiricistic" conception of science. Thus, they are concerned over the fact that their list of primitive notions contain terms which are "unobservable" (e.g., "excitatory potential"), and envisage an emended system in which such terms will be "defined" in terms of their relations to "observables" (e.g., "reaction"). But if by "definition" the authors understand *explicit definition,* their "unobservables" are surely not definable; and since such terms do, as a matter of fact, occur in postulates and theorems which connect them with "observables," their system does satisfy the condition that it be a "verifiable" one. Only a crude empiricism will demand more of a scientific theory. Again, the authors seem to believe that *logical* principles require validation in the same way as the *material* principles of a science, so that apparently both kinds of principles can be established only with some degree of probability. But such a position can be defended no better than the analogous view of Mill. However, none of these difficulties detract from the interest and importance of the present book or of the larger undertaking upon which it is the first full report.

E. N.

Psychologie. Wesen und Wirklichkeit der Seele. MAXIMILIAN BECK. Leiden: A. W. Sijthoff's Uitgeversmaatschappij N. V. 1938. ix + 271 pp. 6.50 fl.

This stimulating and bold essay, which goes quite beyond "psychology" as generally understood in the United States, is at once a critique of certain aspects of Husserl's phenomenology and a constructive theory of psychic life. Convinced that erroneous assumptions about empirical consciousness ultimately forced Husserl to retreat into "transcendental consciousness," Dr. Beck, intent on expurgating phenomenology of all speculative elements, distinguishes sharply between the psychic *I* or soul proper, consciousness or *Geist,* and the corporeal body. To each of these he attributes

distinct, substantial being, though he acknowledges their subtle and manifold interrelations. On the basis of these distinctions he now concludes that intention and interest, being functions of the soul or ego, are completely independent of consciousness. Intention is not a correlate either of a mental act or object, nor is it conditioned by consciousness. On the other hand, consciousness is not to be identified with the psychic *I;* of itself, consciousness is simply pure cognition or intuition (*Anschauung*). In so far as things are known in consciousness, apart from other conditions, they must be the same for all persons; and in so far, too, they are all alike objective. The subjective element enters into consciousness only when the intentionally directed ego figures in the contents of consciousness, or when this ego directs and commandeers consciousness in the interests of the self.

Having established these distinctions and conclusions to his satisfaction, Dr. Beck devotes the remainder of his treatise to a vivid phenomenological description of the nature and functions of the blind, dynamic *I*. Different egos are not functions of different consciousnesses of the world; they are, simply, originally different egos—indeterminate x's, unique centers, not of consciousness, but of interests and drives. Borrowing now from Leibniz, but not without appropriate modifications of the monads, the author conceives each ego as a center which seeks to bring the whole world to a focus in itself. But in order to effect this, it must enter into relations with its world through consciousness. Thus it is the logic of interest, operating through consciousness, which mirrors the universe and accounts naturalistically for the "pre-established harmony." Dr. Beck examines and describes in detail just how the blind but interested ego interacts with the world in which and through which it is realized, how it thinks, acts, and feels. In this connection he defends a realistic theory of cognition and does not shrink from embracing a realistic theory of error also.

In describing the development of the ego, the author leans heavily on both Bergson and Nietzsche. The self is potentiality; its life is duration and continuity. Development is possible only so long as the soul is confronted with the tension of misfortune and evil. Here again the author does not shrink from the consequences of his position, and maintains, vigorously but not persuasively, the unreality of evil.

Though Dr. Beck's method and presuppositions differ markedly from those of English and American realism, a number of his conclusions bear an arresting resemblance to the latter. But as is so often the case, much that passes here for realism or phenomenological description is fairly bristling with speculative assumptions.

Though the author has a fine gift of penetrating introspection and is alert to the subtlest nuances of diverse human experiences, the many fresh, lively instances he adduces serve better to illustrate his theses than to establish them. Nevertheless, the provocativeness and persistence of his basic ideas, the vigor and skill of his style and treatment, and the new setting which he gives to many a familiar philosophical problem, make this book one which merits wide attention and careful study.

O. F. K.

OTHER NEW BOOKS AND JOURNALS

Philosophy of Science. Volume 7, Number 2. What is Insight? *W. M. Malisoff.* Vocation versus Profession in Philosophy: *C. H. Miller.* On Physicalistic Models of Non-Physical Terms: *Gustav Bergmann.* A Critical Analysis of the Canons of Science: *P. B. Sharpe.* Peirce's "Pragmatic" Method: *W. H. Hill.* Verifiability and the External World: *F. L. Will.* The Nature of Causation: *R. B. Winn.* On Some Methodological Problems of Psychology: *Gustav Bergmann.* Inspection and Introspection: *Ledger Wood.* Self-contradictory Propositions: *M. Lazerowitz.* An Educational Application of Resources of the Unity of Science Movement: *Lee Byrne.*

Revue Néoscolastique de Philosophie. Tome 43, No. 65. L'expérience de la valeur: *Aimé Forest.* Recueillement métaphysique: *Louis De Raeymaeker.* Supplement: Répertoire Bibliographique, Livraison de Février, 1940.

NOTES AND NEWS

Professor John Jacob Coss, executive officer of the Department of Philosophy of Columbia University, died of a stroke in New Orleans, April 27, 1940, at the age of 55. We regret that we are obliged to announce his untimely death to his many friends.

The new officers of the Western Division of the American Philosophical Association, elected at the meeting at Ohio State University, April 25–27, 1940, are as follows: President, R. A. Tsanoff; Vice-president, Charles Hartshorne; Secretary-Treasurer, D. Luther Evans; new members of the executive committee, W. S. Gamertsfelder, Arthur E. Murphy, A. C. Garnett.